

# LISTing

## Newsletter

May, 1988

Newsletter of the  
Long Island Sinclair/Timex  
Users Group

.....  
Incorporating NYTSE

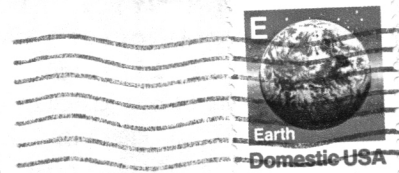
### In Memoriam

We are very sad to notify the members of LIST of the passing of Cedric Ronald Bastiaans on April 30th. Cedric was an avid supporter of not only our group but contributed many articles to other Timex/Sinclair groups throughout the country. Recently Cedric was made an honorary member of LIST in recognition of his contributions. We have sent our condolences to his family. Those of you that would like to send their own expression of sympathy to his family, can send them to: The Bastiaans Family, 3 Cassie Court, Mount Sinai, NY 11766.

This issue dedicated to the memory of Cedric Bastiaans

A Loyal Contributor And Supporter of Sinclair  
Computing

L.I.S.T.  
5 Peri Lane  
Valley Stream, NY 11581



NEXT LIST MEETING:

JUNE 12, 2 P.M.  
Harvey Rait's House  
Above address

TO:

DON LAMBERT  
3310 CLOVER DR. S  
CEDAR RAPIDS, IA  
52404

NO LIST MEETINGS  
IN JULY + AUGUST

FIRST CLASS MAIL  
DATE MEETING NOTICE  
Please DON'T delay!

=====

LISTing Listing

Please send submissions to:

LIST, Harvey Rait

5 Peri Lane

Valley Stream, NY 11581

PLEASE NOTE THE NEW LIST ADDRESS

=====

BYE!

Well, it looks like this will be the last issue of LISTing that I will be editing. As many of you already know, I am off in pursuit of opportunity (i.e.- money). I have received some offers for jobs in the technical field down in Orlando, FL, and one up here in New York. After doing much thinking, I decided I would like to try cleaner air and perpetual sunshine for a while, so its off to Florida I go! By the time you get this I will be one of the following:

- 1) Burnt to a crisp
- 2) Dried to dust
- 3) Living it up in FL
- 4) back here in NY.

So if the spinning wheels of fate end up on number three- BYE! I'll miss LIST and NYTSE (I still say it should be pronounced KNIGHTS, not nitsee). Maybe I'll hook up with one of the Florida TS groups. Whatever it is, I KNOW I'm gonna keep on Sinclairin'- and so should you....

KEEP THE REVOLUTION ALIVE!

W W EEE L CC OOO M M M EEE  
 W W W E L C O O MM MM E  
 W W W EE L C O O M M EE  
 WW W E L C O O M M E  
 W W EEE LLL CC OOO M M EEE

BACK MYLES (C.)!! You know your effervescent presence was missed at LIST...and NYTSE so WELCOME BACK BUD!!

RATIONS WASH UP?

Sir Clive Sinclair's [our Uncle] latest personal computer, the Z88, is coming to the U.S. market in a typically unusual fashion. Diversified Foods Inc., a grocery wholesaler in Portland, ME, will handle U.S. distribution of 13,000 computers and peripheral systems-

worth \$7.1 million in all. Diversified Foods has already set up a subsidiary, Sinclair Systems Inc., to distribute the \$549 battery-powered portable computer, which weighs less than 2 lbs., and includes built-in word processing, spreadsheet, and time management software.

Contributed by Stoney M.- Stolen from Electronics, May 26, 1988.

WHAT THE HELL IS A ZEEPER?

As you will see, I have included several articles from some entity which is called "The Zeeper". Some of these articles are quite old- going back to 1986 (old indeed, huh). After reading this Zeeper's explanation of IBM, I was hooked. Now how to I join Zeeper International?

PS- If anyone can identify this Zeeper, DO SO! So the next time one of my Sinclair's bombs out I can curse the Zeeper's existence.

A+ IS AN F

I leave you to decide what the F should stand for. But it is official. A+ Computer Response has finally gotten smart and is getting the hell out of the QL business (or so they say). Their "LAST CHANCE" flier is reproduced somewhere in here. At the throw away price of \$89 for QL Systems and \$75 for kits, I suggest you buy SEVERAL...NOW before they're sold out. And hope that one works. HEY YOU- DON'T MISINTERPRET. I LOVE THE QL!! As you already have had stomped into your head by now, there is nothing anywhere near the QL's sophistication for the price...or even within several hundred dollars more. It's just that A+ seems to have filled in Sir Clive's shoes- and everything else as well when they bought his stuff.

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By popular request, THE OMNIPOTENT ZEEPER has returned to grace this humble rag with his presence. Well now let's see what is in my little bag of goodies for the refugees of the computer world. We had an incredible laugh at the last meeting of ZEEPERS INTERNATIONAL. Good Ol' Clive is still trying to make computers. Now this is the same guy that brought you the membrane keyboard, the non-ASCII character set, cassette storage, and single-handedly re-invented the 8-track as a storage device. To top it off, this guy set a new standard for the absolute worst level of after-sales support for any computer.

This man is actually planning to enter the MS-DOS world. This man took one of the most sophisticated microprocessors in the world (68008) and completely ruined it by putting it into a QL! The only machine in the world that uses not hard drives, not floppies, but mini 8-tracks. The display is weird, the keyboard is weird, and the operating system is weird. Now he is making the Z-88. I wonder what Sir Clive can do to an 8088 chip? It is claimed that it will have the capacity to hold the entire works of Shakespeare. That's the first hint, it will have an operating

system that only understands Elizabethan English. Forget any thoughts of IBM compatibility. You are going to see yet another computer with little boxes stuck on the back of it to include all the things necessary to turn it into a semi-civilized computer. The after-market will once again have to rescue another Sinclair computer. The first add-on will be an "improved" keyboard.

When the Z-88 finally shows up in North America, it will be complete with enough Sinclair weirdness that it won't even rate reviews. It will originally be marketed to the holders of K-Mart credit cards. It will be incompatible with any known monitor with special adaptor cables. It will only output to the 2040 printer. In keeping with the Sinclair standard, the Z-88 will have a totally bizarre storage medium. I foresee a built-in miniature open-reel tape recorder.

As a final note, you will be glad to note that Amstrad has been infected with Sinclair madness. Their MS-DOS machine, the PC 1512 is almost perfect. It has a great price, lots of options, full compatibility, plenty of features. What's wrong with it? The power supply is in the monitor. You have to use the Amstrad monitor. Shades of Adam.

From ZX - Appeal April, 1987

The following article appeared in the June 12/86 edition of the 'NewsScientist' and is reprinted without permission. Let 'em sue!



## The decline of Uncle Clive

Knighted by Margaret Thatcher and widely considered as the most well-known scientist in Britain, the chairman of Sinclair Research seemed unstoppable. What went wrong?

Ian Adamson and Richard Kennedy

ON 7 APRIL 1986, Clive Sinclair sold off his name and rights to all existing computer products to Amstrad. With this single, dramatic move, he has effectively withdrawn from the market in home computers that his products played a major role in creating. When Sinclair signed the deal with Alan Sugar of Amstrad, Sinclair's products held the largest share (around 35 per cent) of this declining but still lucrative field. Sinclair's decision to opt out at this point illuminates several recurrent problems with his entrepreneurial style.

It also raises questions about the viability of Sir Clive's future operations. Alternative offers (favoured by Bill Jeffrey, the managing director of Sinclair Research) would have allowed the computer business to continue, and avoided many of the redundancies, which involved 95 per cent of the workforce. However, the price of the alternative deal was that Sir Clive would become a minority shareholder. The history of the decline of Sinclair's earlier company, Sinclair Radionics, subsequent to 1977, when Sinclair became a minority partner and the National Enterprise Board took the helm, showed that loss of absolute control, with the attendant obligation to take into account the views of others, soon becomes intolerable to a partner programmed to run a one-man show.

Sinclair's decade of fame and (mostly) favour, which resulted in both his knighthood and the less-inspiring sobriquet of "Uncle Clive" among the enthusiastic young purchasers of his high-tech toys, is mainly the result of the popular success of the "ZX" series of computers, from the ZX80 to the ZX Spectrum. While his predominant social contribution was to promote mass addiction to computer games, Sinclair has been widely misrepresented—not least by those centres of learning that gave him honorary degrees for "services to computer literacy and education"—as the man

who brought computers into the home. This is not strictly true, if we understand by "computer" a functional tool with several related applications, whose design increases the ease or efficiency with which we can perform such tasks.

Sir Clive's marketing achievement was to downgrade the "concept" of a computer to the point where he could claim to provide one for less than the magical £100 mark. To this end, efficient keyboards and monitors, useful amounts of memory, effective filing and storage systems and the like were stripped away, to leave an affordable facsimile of a "computer". The market image was more important than what the computer could do, but the burgeoning industry in computer games provided an application which adolescents—young and old—eagerly seized on as the *raison d'être* for their new gadget. In the main, it was ignorance of genuine computer technology that fired the success of the ZX range, despite the availability of accessories that, albeit inefficiently, turned the Z80 processor chip at the heart of these up-market toys into the core of a useful machine.

The QL microcomputer marked Sinclair's attempt to move out of games and into the market of true home computers and computers for small businesses. The launch was a multi-faceted disaster. The original concept—an affordable, portable and genuinely useful computer, with a flat-screen display, adequate memory, built-in communications modem and "free" software to perform basic functions—was viable, as attested to by Amstrad's later success with its less ambitious purpose-built word processor, the PCW8256. However, Sinclair's penchant for idiosyncratic technologies led the company to waste time and effort on trying to produce a workable flat-screen display, using Sinclair's modified cathode-ray tube. Other delays in the development of the QL resulted from the choice of a new but inefficient microdrive



(a system which uses a fast audio cassette based on a continuous tape loop) as the medium for storing data.

Another characteristic of Sinclair, launching products before they were really ready, reached its apotheosis in the high-profile launch of the QL. At the time, not even the company's engineers had seen a complete working prototype. The consequent deficiencies in the machine, and the delay of around a year before the QL became an available and adequate computer, prevented the support of a maturing market which, although ready for a product of this type, was wary of investing in unconventional technologies. There was very little software available at the time of the launch. Poor quality control, from Sinclair's practice of contracting out the manufacture of his products, meant that too many machines did not work when they reached customers. Alan Sugar was quoted as saying that Sinclair's quality control was "atrocious". These shortcomings were also factors in the failure of the QL. The public did not want an "innovative" machine for which they would, as Sinclair's staff belatedly admitted, form a test-bed. They wanted a reliable, functional and staid application of proven technology.

### The working man's boffin

The significance of Sir Clive's corporate decline, otherwise a minor event in the commercial world, is that he has worn the mantle of a great British inventor (the term he prefers), innovator and entrepreneur. He has been identified in the public eye with the visible application of microchip technology—what might be termed high-street high-tech. His corporate failings are likely to be equated with the failure of British "high technology" as commonly understood. In fact, Sir Clive's talents lie in absorbing and adapting original research to develop inexpensive products, often of dubious utility (witness the flat-screen pocket television and the C5 electric tricycle), and marketing them initially by mail order to increase his profit margins and finance his production. People confuse his valid commercial role (where validity can be measured in terms of corporate profits and marketing success), with the popular myth of the inventor beaver away in his lab. The image of Uncle Clive, the working man's boffin, is one that Sinclair's public relations machine has relentlessly promoted. We should base any assessment of Sir Clive's prospects not only on his success or otherwise in directing his R&D staff creatively to exploit existing technology, but also his recurrent problems with production and occasional failures, both technical and commercial.

What of the future for Sinclair Research? One major factor is cash flow. There may be no current debts, and some retained profit from the deal with Amstrad, but apparently the only income will be royalties received from ICL on sales of the modified Sinclair technology incorporated in the One-Per-Desk, "workstation"—an intelligent telephone system—plus any of his own assets (much diminished by the fiasco of the C5) that Sir Clive chooses to make available. Any future must depend on bringing new and viable products to the market quickly, or attracting sufficient financial backing for longer-term ventures.

Leaving aside Sinclair's declared intention to become a "think-tank" for selected clients—a dubious role for the "visionary" who brought us the C5, one might think—Sinclair has three projects in prospect. On the computer front, the company is developing Pandora, a portable micro-computer, bearing a remarkable resemblance to the original QL, but by all accounts omitting microdrives in favour of 3.5-inch disk drives. That Sinclair is still revising the specification of this product suggests a state of confusion that does not bode well for the timely arrival of a competitive and functional product. Amstrad has first refusal on marketing the Pandora, and it is unlikely to take on anything unless it accords with Alan Sugar's dictum of "the right product, at the right price, and at the right time". On past form, Sinclair's R&D team seem unlikely to achieve this, leaving Sinclair

Research the task of starting again with minimal resources and little credibility as a designer of computers, in a field where companies such as Epson, NEC and Tandy are expending intense technical effort.

The second project, emanating from Sinclair's low-profile telecommunications laboratory based in Winchester, is the cheap portable telephone for cellular networks. This will sell for less than £100, says Sir Clive, tilting at his magic figure once again. The product should be on the market in 18 months' time. This is manifestly a viable product, as Alan Sugar has also decided, since his company also intends to produce one. So the company jointly created by Timex and Sinclair to produce the telephone faces intense competition in an area where mere corner-cutting on the costs of components and production in the classic Sinclair style will not succeed in the long term—any more than Sinclair's computers faced up to Amstrad's challenge.

The third and most intriguing option—and the one which presents the most daunting technical challenges—is wafer-scale integration. This approach to the design of semiconductors offers financial savings by producing complete processing systems, laid down on a single wafer of silicon. It could also pave the way towards compact implementation of the new generation of processing techniques currently under development. The opening in 1983 of the prestigious Metalab research unit near Cambridge provided a base for the realisation of Sir Clive's visions, among them the much-publicised "Fifth Generation" project to develop artificial intelligence. Sinclair made patriotic noises about beating the Japanese at their own game—whatever that might be, and to what end. One of the elements of this fantasy was the investigation of wafer-scale integration.

Sir Clive's initiation into the world of the wafer took place in the summer of 1983, with the arrival of Ivor Catt who had answered Sinclair's advertisement for people to work at Metalab. Depending on who you talk to in the generally conservative semiconductor industry, Catt is either a crank or a visionary. For 20 years, he had been refining the theoretical foundations for a revolution in the semiconductor industry, and thus was tailor-made for the Sinclair project. Sir Clive took on Catt as a consultant and bought up Catt's patents to the wafer-scale process.

Catt himself has succinctly summarised the appeal of the wafer against existing chips and methods of manufacture: "I noticed that the silicon wafer was a hundredth of the cost of the total system, so why not use that cheap commodity to build the system on the wafer instead of sawing it up to form separate circuits?"

Currently, the computer industry produces multiple chips on each wafer of silicon. The production process involves chopping up the wafer, testing each chip and then separating the working chips from a significant number of faulty chips. The working chips, after mounting, wiring and packaging in plastic, become part of a larger system mounted on a printed circuit board. Catt's alternative method involves preserving the entire wafer (including the faulty chips), which has internal connections between chips so as to eliminate the printed circuit board. It also avoids the need to test and encapsulate each chip. An electronic logic test built into the wafer circuitry allows each chip to be tested. If functional, the chip becomes incorporated in the circuit and then tests an adjacent chip. Faulty chips are bypassed as a spiral sequence of working chips is established on the wafer. The simplest form would be a memory wafer, but there is a potential to develop new, alternative computer architectures on the wafer.

Throughout the 1970s, the attempt to realise such a

conductor giants. IFT, Texas Instruments and Burroughs, among others, sunk undisclosed fortunes into the dream. The kiss of death for the wafer as an investment option was the debacle of Gene Amdahl, formerly a designer with IBM. Amdahl's pursuit of a "supercomputer" based on the wafer-scale attracted around \$240 million in backing from heavyweights that included Sperry, Digital Equipment and the Bull Corporation of France. By June 1984, Amdahl's company, Trilogy, had conceded that it could not overcome the problems of implementing its version of wafer-scale technology.

The failure of the big boys came as no surprise to Ivor Catt, whose approach had always radically differed from those of his rivals. Axiomatic to Catt's technique was a reduction in the number of connections made to the chip. In the latter stages of Amdahl's mega-wafer, the doomed prototype had an astounding 1200 pins packed on to its 6.4-centimetre design. Since, according to Catt's theoretical design, communication with the wafer passed through the first chip on the spiral, his chips were designed as bipolar components, thus needing only two pins as connections.

### Investment in the wafer

After years in the wilderness, the National Research Development Corporation eventually funded Catt's theories in the late 1970s. This at least enabled him to patent their implications. At Middlesex Polytechnic, Malcolm Wilkinson ran a research team which examined the problems of implementing Catt's work. Wilkinson and his team went on to develop their research with Burroughs, where they successfully realised a provisional "test structure". At this point, the project fell foul of company politics. A new and predominantly American management, presumably with the experience of Amdahl fresh in their minds, wanted nothing to do with research into wafer-scale technology.

Sir Clive's interest in the technology could hardly have come at a more opportune moment. At the end of 1983, his relatively small, if momentarily profitable, company was able to poach not only Catt, but Wilkinson and a significant proportion of the team from Burroughs. In time, valuable additions from research groups working in related technologies from Plessey, TI, STL and DEC, would arrive.

Although association with wafer technology does nothing to enhance his self-styled stance as inventor and innovator, Sir Clive's support of these discredited research objectives was undoubtedly a canny move at a time when Sinclair Research was in a position to fund such an enterprise. In acquiring Catt, Wilkinson et al. and the wafer-scale patents, en masse and cut-price, it is arguable that Sir Clive was making an acceptable high-risk investment in the future. Sinclair's appropriation of Catt's work mirrors his advocacy and adoption of Denis Gabor's work in the development of flat-screen technology at Imperial College in the late 1950s.

In a relatively short time it looked as if the investment would pay dividends. By spring 1985, Wilkinson's research suggested that the company could economically produce a wafer with a memory of half a megabyte for Sinclair's ill-fated QL microcomputer. Unfortunately, at the same time, the price of conventional memory chips fell dramatically. A few weeks later the financial crisis at Sinclair Research came to a head, precipitating the sequence of events which ended in the abortive "rescue" by Robert Maxwell. It seems likely that Sir Clive's preoccupation with the wafer-scale project exacerbated his lack of interest in the computer division of Sinclair Research, hastening a deterioration of the financial crisis to the point of no return. The fact that Sir Clive later turned down an offer that would have ensured the survival of the computer products tends to support the impression that, as far as he was concerned, home computers were history. However, while Sinclair may have been intrigued by the "intellectual challenge" of wafer-scale, it is equally clear that his much-lauded vision was decidedly myopic.

unlikely to provide the funding for more sophisticated research, Robb Wilmot, chairman of ICL, was recruited onto the research board as troubleshooter.

Wilmot's brief was to drum up investment for the wafer-scale project. He soon recognised a potential that had eluded Sir Clive. Up until Wilmot's intervention, Sir Clive's exclusive direction for research into wafer-scales was towards the enhancement and development of Sinclair's existing technology and projects. Wilmot approached the problem of investment with the conviction that a solution to the production of wafer-scale chips could propel Sinclair Research into a position where the company would challenge the leaders of the semiconductor industry.

According to Wilmot, wafer-scale chips could revolutionise the design and production of all types of computers, and play a major role in communications products and defence systems (particularly radar equipment). In other words, the development of wafer-scale technology seemed poised to take Sinclair Research well out of its depth. Ironically, the company's capacity to raise finance was in a sense impeded by the exciting potential of its R&D resources. The public's recognition of Sinclair Research's managerial, marketing and financial shortcomings called into question its corporate ability to exploit effectively such an innovation. During the crisis in 1985, the odds were stacked against even ICL's well-connected superno, Wilmot, coming up with a result. Malcolm Wilkinson sums up the difficulties facing the project, which are the same today as they were six months ago: "It's semiconductors, which are bad news to the City at the moment . . . It's wafer-scale technology, which has had some notable failures . . . and then there are the problems that Sinclair Research has got, and questions about the viability of the business side of it."

As a broker commented when the price of shares in Amstrad fell following the announcement of the deal with Sinclair, "The City . . . gets wobbles in the stomach when the name of Sinclair is mentioned." In the event, Wilmot failed to find the backers. A fortuitous deal with the Dixon chain of shops enabled Sir Clive's company to struggle on into the New Year until Alan Sugar came to the rescue in April.

With the Amstrad deal came the announcement that two separate companies would continue the projects on the radio telephone and wafer-scale technology. Sir Clive made it clear that he would have no part in the day-to-day running of either corporation. Barclays, the company's bankers, agreed to a limited investment package for wafer-scale technology with Sir Clive retaining a majority interest in the company, and the bank having an option to take up minority holdings. Desperately under-capitalised, it is hardly surprising that the team researching into wafer-scale technology is directing its attention towards distinctly unspectacular goals. The only project announced by the company is a wafer with a memory of 5 megabytes. It remains to be seen whether the experimental pilot production achieved in September 1985 can be sufficiently improved to create a product that can compete with conventional memory components in 1987.

Ivor Catt has always insisted that memory products are merely an incidental spin-off from the main work of wafer-scale development. The main purpose of wafer-scale technology, he believes, is to assist in the design of systems that will revolutionise computer architecture. A growing number of computer theorists are inclined to view these developments with interest, but Sinclair's company is hardly in a position to fund such ambitious research programmes. So while wafers may yet hold a hope for the future, it seems unlikely that they hold out much hope for Sir Clive. □

Ian Adamson and Richard Kennedy are freelance authors and journalists. They have based this article on research for *Uncle Clive*, a critique of Clive Sinclair's technical and managerial practice, to be published by Penguin Books next September.



# Sinclair Research Sells Out!

THE ZEEPER SPEAKS...

**ZX-APPEAL, NOV 1986**

My dreams have come true. Who would have thought that Clive would give up so easily. Can't he take a joke? Don't go away mad, Clive. It sure has been fun---I threw everything I could think of at you poor fools. I have a real feeling of accomplishment about the ZX81 keyboard but the RamPack wobble was a stroke of genius. I must admit, my brother came up with that one. The 2068 was certainly fertile ground. Imagine, a machine able to address 10 megs being loaded from a TAPE RECORDER. They almost came up with a decent keyboard but a little whisper in the right ear fixed that. The printer was fun---the ink faded on the paper in the sun light. One of my happiest days was when I was able to sublimally convince the new man at TIMEX that no self respecting toy watch maker should be mixed up with those new-fangled computerwhatzits. I didn't reckon on the hardness of the average Sinclair nut. As soon as I dried up one area of supply than another popped up. You probably thought you had me whipped when the TC2068 came over from Portugal. Little did you realize that was all part of the master plan---as you soon found out. Lo and behold if you didn't eventually go back to the land of the beginnings for support.

The QL might have given me a run for the money until I came up with the idea of a 32 bit machine being loaded from a MIDGET tape recorder. And still you bought the infernal things. With the appearance of the 128, the war started to get serious. You left me no choice but to put a stop to this once and for all.

From now on you are just going to have to accept the fact that if you want to play with computers, you are going to have to play with the usual mundane, unexciting, characterless boxes everyone else puts up with. I don't think this AMSTRAD will be any threat to the 'status quo'. (Have you seen this Alan Sugar? Looks like he sold stainless steel pots door to door before he discovered computer suckers.) There was the slight chance that AMSTRAD could have made life a little more difficult if the QL had been kept in production but I quickly put the kybosh to that threat.

Well, it looks like all is right with the world from where I sit. I think I'll wander over to adjacent fields to see how things are going. Don't worry, I'll still look in every now and then and as soon as I see the slightest amount of innovation or creativity rearing it's ugly head I'll be back faster than you can lose your memory in a power glitch. Have fun kiddies.

....Did some one say some thing about electric cars and 'planes? Hmmm.

This article is reprinted from the Aug/Sept issue of Sinc-Link. One word of caution...I put one in my 2068 and all works well except when

resetting in Spectrum mode ...then the machine emits the most alarming noise of displeasure.

## TS2068 RESET AND INITIALIZATION PROBLEMS WITH SOLUTION

Are you tired of having to use the 2068's ON-OFF power switch to reset the computer? Read on, there is a solution.

Do you have a Larken disk system and also one common AC power switch to turn on your computer, disk drive, disk controller, monitor, and all other peripherals? If you do, you've no doubt experienced the inconvenience of having to shut your computer OFF and then ON again in order to initialize properly. Read on, for there is a solution.

Do you have a 2068 with a wired-in Spectrum ROM and are having some problems with the computer not initializing positively on the Spectrum ROM without having to turn the computer's power OFF & ON a number of times? There is a solution!

The solution is very simple and would cost less than \$6.00 in our lowly Canadian Dollars.

If you have one or all of the above problems---install a RESET push-button (P.B.) and a small 10 mfd. tantalum capacitor and your problems are resolved.

### INSTALLATION

The 2068 has an existing circuitry that automatically resets the computer whenever the power switch is turned ON. Fig.1 shows this circuit in a simplified schematic form. The solid lines along with resistor R43 and capacitor C21 are the existing reset circuitry. The dotted lines show the required additional components---the pushbutton (P.B.) to provide the means for manual RESET (whenever you wish) and capacitor CR to provide positive initialization on power up.

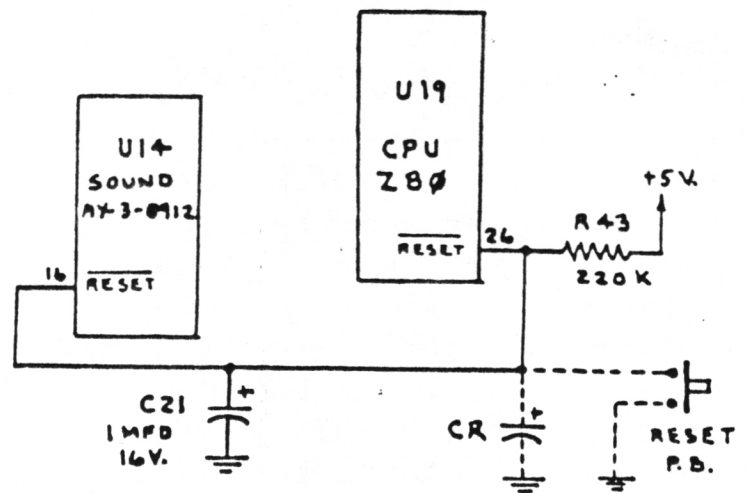
FIG.2 shows the suggested placement of the RESET P.B., capacitor CR and wiring. To install these, you will have to remove the top of computer (containing the keyboard).

Drill a 1/4 inch hole on the rear lip of the portion of the computer and mount a mini P.B. A preferred location is near the monitor jack, but leave sufficient space for convenient push-button finger reset action.

Use color-coded wire (black & red preferred) and solder one end of these wires to the protruding leads of the capacitor C21. Make certain that the red wire is soldered to the +ve lead of C21. Twist the wires and run the wires neatly to the P.B. Connect the wires to the P.B. leads but do not solder. Now connect the 10 MFD. capacitor CR to the respective leads of the push-button, making certain that the +ve lead of the capacitor CR is connected to the push-button lead containing the red wire. If this is correct then solder the wires and capacitor CR to the push-button. This completes the installation.

Have fun!

Charlie Urban  
(416) 293 6789



CR = 10 MFD., 16V. Tantalum Capacitor (RS-272-143)  
P.B. = Push Button, SPST Momentary, Normally Open (RS-275-1547 or equivalent)

FIG. 1 SCHEMATIC - 2068 RESET CIRCUIT

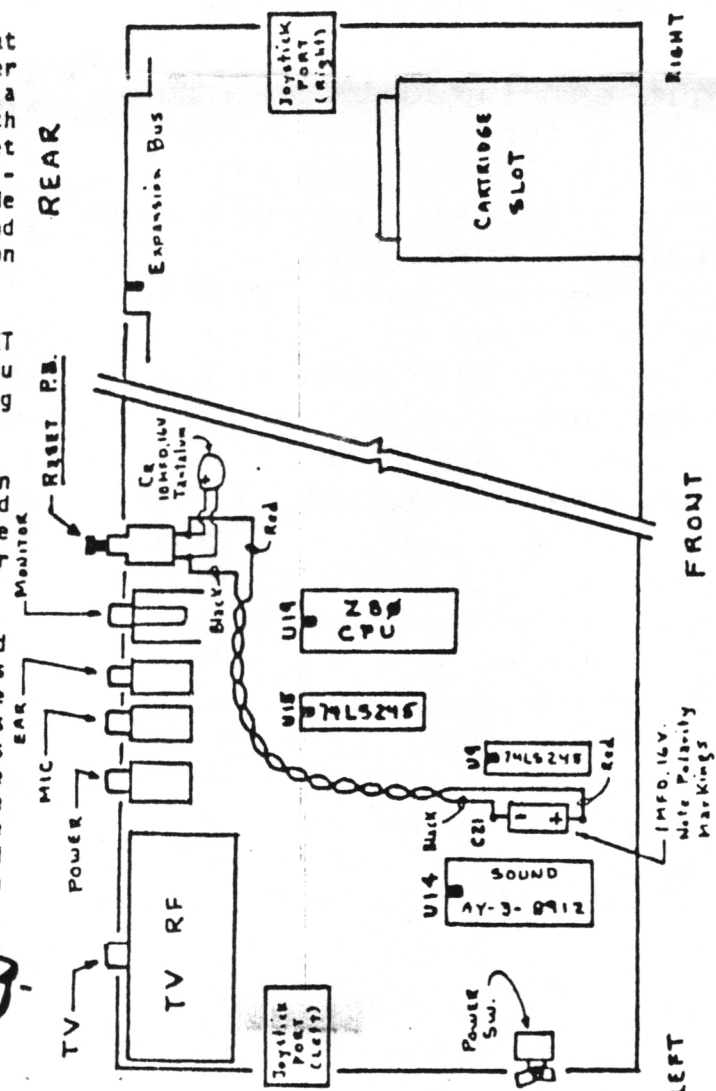


FIG. 2 - 2068 COMPONENT LAYOUT, TOP VIEW

nothing more than an idea. Nothing at this time is set in concrete. We are more than open to suggestions. To make it work, these ideas of yours have to be forwarded immediately. We are putting on a time limit until June 30, 1988. If there is no support, then we will not proceed further. If there is input, we will update on a monthly basis to whoever will put the information in print. So, let's hear from you soon!!

TEMPORARY CONTACT FOR INFORMATION :

MEL NATHANSON

7515 ARBORDALE DRIVE  
PORT RICHEY, FLORIDA 34668

813-863-5552

```
=====
100 REM audioscan
102 DEF FN a(l)=1+INT (.5+(l/30))
103 GO SUB 410
105 GO TO 200
110 DRAW INK FN a(l/1.5);x-n,IN
T (-l+y)/1.5: LET x=n: LET y=l:
RETURN
120 DRAW INK FN a(l/1.5);0,-l/2
: RETURN
200 PAPER 0: INK 7: BRIGHT 1: C
LS
210 PRINT AT 0,10;"Audioscan"
220 PRINT AT 2,2;"This program
gives a graphic representation
n of a signal - input to the 20
68 ear socket..."
225 PRINT AT 7,2;"Load tape or
other signal source to the ear
socket and select option:"
230 PRINT AT 12,5;"1--line grap
h";AT 13,5;"2--bar graph";AT 14,
5;"3--point graph"
240 INPUT INVERSE 1;"enter opti
on (1 to 3)";q: IF q<1 OR q>3 TH
EN GO TO 240
250 CLS : PRINT #1; INVERSE 1;"
space to freeze scan": LET i$=""
: LET x=0: LET y=0
255 FOR n=0 TO 255: LET l=USR t
one: PLOT n,INT (l/1.5)
260 IF q<3 THEN GO SUB 100+(q*1
0)
265 LET i$=INKEY$: IF i$=" " TH
EN GO TO 300
270 NEXT n
275 GO TO 250
300 PRINT #1; INVERSE 1;"m=menu
r=restart e=end": PAUSE 0
310 LET i$=INKEY$: IF i$="m" TH
EN RUN
320 IF i$="r" THEN GO TO 270
330 IF i$="e" THEN STOP
340 GO TO 300
400 DATA 1,0,255,17,0,0,219,254
,203,119,32,1,19,16,247,66,75,20
1
410 LET tone=65368
420 FOR n=tone TO tone+17: READ
d: POKE n,d: NEXT n: RETURN
425 STOP
430 SAVE "audioscan": RUN
```



2068  
Audioscan  
- from 2x-Appeal  
unknown date, author

GRAPHIC Audio  
Representation on a  
2068!

S . N . U . G .  
Sinclair Northamerica Users Group

During one of the organizational meetings of the recent Sunstate Timex/Sinclair Winterfest '88, the idea of a National organization for the advancement of Sinclair computing came up. It was decided that since we had developed a "core group" that was dedicated to promoting Sinclair computing, We would attempt to lay the groundwork for such an organization. It was also mentioned that the greater the amount of time from the departure of Timex from the computer industry, the less of an active market would result. Since we would have users from across the nation at the fest, it would be an ideal time to make our plans known. So, the Sinclair Northamerica Users Group, or SNUG (a name submitted to us by John Cushran, and later modified by Bill Jones) was starting to come closer to reality.

WHAT IT IS

The intent of SNUG is to provide a forum for exchange of ideas. It would be a source of information, such as a listing of active members, active Users Groups, Sinclair specific Bulletin Boards, an active library of Public Domain software, and a listing of available shareware and freeware. Later on we hope to propose an industry wide standard of hardware and software compatability. So as to not to have to reinvent the wheel, and to do this in the shortest amount of time, we going to try and use an already established National group, such as CORSA ( Corvair Owners Assn.) as a model to base our group on. SNUG would act as an umbrella Organization, with Regions being developed to tie in with established groups in those areas.

WHAT IT ISN'T

It is the intent of the organizers NOT to infringe or supercede any already established User Group or Vendor. It is intended to show some strength to the industry that Sinclair is not dead, and the mere fact that we can get this Organization together will prove that we can stick together and grow and prosper. We look at this as an enhancement to activities that have been planned on. Hopefully a Northamerican Calendar of events could be established to help co-ordinate any future plans and events. It is not designed to take anything away from anyone.

WHAT TO DO

We need the support of EVERY SINGLE SINCLAIR USER ! Whether you reside in Canada, the U.S., or Mexico, or for that matter anywhere, we need to know how you feel and what you want in this Organization. This is your opportunity to be heard ... your comments, critisms, complaints, or praises. What we have here is



THE ZEEPER SPEAKS...

Zx -  
APPEAL

Greetings to my favorite  
orphans,

UNKNOWN DATE

Oh I can hear the groans now. Here comes the Zeeper to further humiliate us. Well, rest assured that I have managed to contain my smugness over the demise of one Sir Clive Sinclair from the computer world. There will be no I-told-you-so's or muffled giggles. The Zeeper is much too big a person for that sort of thing. In fact, I was raised to be kind to those less fortunate than myself.

I thought you would like to hear what has been happening in the world of real computers. I have just returned from the annual convention of Zeepers International. Yes, there are many Zeepers in the world of computers. In fact, you will find our handiwork wherever people congregate around any brand of computer. At our convention, we compared notes and had a great time. Yours truly, won an award for single-handedly picking off Clive Sinclair. There were others even more prominent.

Over in Amiga land we were very busy making sure that this super-duper mega graphics, all-in-one, humdinger computer from Commodore received the same level of after-market support as the Edsel. That was called the Great Deception Campaign. The Amiga has GREAT GRAPHICS- if you buy the very expensive extra memory to make it work! The Amiga is IBM COMPATIBLE- if you can find a software emulator that is faster than an epileptic slug or buy a Sidecar hardware add-on for mega-bucks! The Amiga takes a HARD DRIVE- and about

\$2000.00 ! The Amiga does MULTI-TASKING- if you have about six months to do nothing else but figure out how to make it work!

Apple land is completely under Zeeper control. We thought they had learned their lesson with LISA. That was not the case. Enter MacIntosh. A cute little machine with a Mouse. We made sure it was absolutely impossible to do anything on your own with that silly little rodent. We made sure it was so tied up with source code spaghetti and legal restrictions that nobody would support it. Apple will never recover.

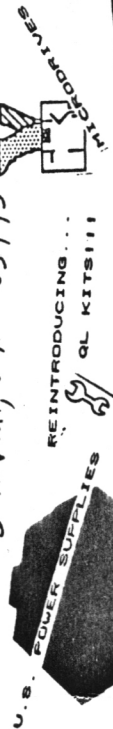
IBM is not forgotten either. BIG BLUE land requires a full division of Zeepers. Now IBM is not an opponent to be taken lightly. We are talking about the Great Grand Mogul of the computer world. Only the most experienced Zeepers get on the BIG BLUE team. There is an entirely different tactic used with BIG BLUE. First, every time they come out with a new machine of any significant value, we make sure it is cloned to death. Everybody and their dog can make an IBM PC compatible better and cheaper than IBM, with a lot more features. Next, we made it the industry standard. This was not the blessing it would appear to be. We also made it the most boring of machines. Everyday all around the world, millions of people are doing very boring menial little jobs with an IBM PC. They are using boring LOTUS and boring SYMPHONY and particularly boring WORDSTAR and DBASE. There is an entire industry devoted to making endlessly boring spreadsheets, data bases, and word-processors. IBM PC users are doomed to a life of tedious boredom.

There aren't many fun

# LAST CHANCE!!

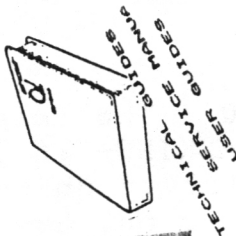
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TECHNICAL GUIDES  
SERVICE MANUALS  
USER GUIDES

Zeepers, Cont. from Page 11...

things to do with an IBM PC. The BIG BLUE division is ever vigilant to make sure that "fun" software writers stay un-discovered. In fact, our division has been so successful that it cost an arm and a leg to advertise in IBM glossy magazines so that the "fun" writers can't afford to advertise. The only way to get the real fun stuff is if you get freeware on a BBS. The fun guys are actually begging you to pay them after you get the stuff for free. It's sad. Even I couldn't

be that cruel. We have coined the phrase Incredibly Boring Machine. The next time you see a wretched little data entry clerk hunched over a desk with eyes permanently glazed over you'll know how effective the BIG BLUE division has been.

So you see, we Zeepers haven't just singled out you lowly Timex users. We spread it around. You guys are just my particular specialty. Don't think that because I finally stomped Sir Clive into the mud face first, that I am finished with you. Not by a long shot.

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